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Impact of Co-Production on Consumer Perception of Empowerment

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Abstract

Service-Dominant logic emphasises the customer role as co-creator of value. However, there is little empirical evidence of how customers perceive and experience value co-creation from participation in service co-production. The internet and interactive websites have increased the potential for consumers to engage in co-production through increased self-service which is acknowledged to contribute to consumer empowerment. The paper explores empirically the impact of service co-production via web technology on consumer perceptions of e-empowerment. Findings suggest that e-empowerment is multidimensional comprising empowerment and disempowerment dimensions. The paper makes several contributions to services theory. Variable co-production leads to different types of empowerment/ disempowerment. Value-in-use can be perceived as process value and outcome value. The findings challenge the assumption that co-production naturally leads to co-creation of value. Co-production can be a double-edged sword: for some it can be value-enhancing, whereas for others it can be value-destructing. The paper notes several implications for practice.

Keywords

Co-creation; co-production; empowerment; internet; self-service.

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Introduction

Service-Dominant logic argues that consumers of services inherently are involved in their co-production and “value is defined by and cocreated with the consumer rather than embedded in output” (Vargo & Lusch, 2004, p. 6). Thus, Service-Dominant logic implies a “transition from a definition of value as enclosed in the product or service to one where value in fact means empowering the customer to customize (Denegri-Knott, 2006, p.965). However, there is little empirical evidence of how customers perceive and experience value co-creation through the process of co-production (Payne, Storbacka & Frow, 2008).

In the organisational literature, participation (co-production) has long been associated with empowerment (Ford & Dickson, 2011). Consumer empowerment implies increasing consumer value by providing additional access, content, education and commerce to wherever the consumer is located (Pires, Stanton & Rita, 2006). Yet, the assumption that engaging consumers in co-production increases their control, self-efficacy and empowerment has not been tested widely in the marketing literature (Esmark, Noble, Bell & Griffith, 2015). Understanding the impact of service co-production on consumer empowerment is increasingly important as the extent of co-production experiences become more common.

The internet and interactive websites have increased dramatically the potential for consumers to engage in co-production of services through increased self-service. This, “significantly and quite deliberately increases the customer co-production role” and “provides a particularly interesting context in which to consider the relationship

between co-production and customer perception of value co-creation” (Hilton & Hughes, 2013, p.862). Moreover, the role of the internet and web technologies in providing consumers with the ability to engage in co-production of services has been acknowledged to contribute to consumer empowerment (Wathieu et al, 2002; Kozinets, De Valck, Wojnicki, & Wilner, 2010). Füller, Mühlbacher, Matzler and Jawecki (2009) find that “co-creation tools that support consumers in solving their task make them feel empowered and enjoy the participation experience” (p.93), but assert that the impact of tools and technology on “individuals’ perceived empowerment has been rather neglected” (p.94).

Set against this context, the study explores the impact of customer participation in service co-production via an interactive website on perceptions of empowerment (value co-creation). The study specifies and examines the dimensions along which customers perceive themselves to be empowered through participating in service co-production via a website. We make several contributions to services theory in understanding the impact of the nature and extent of customer co-production on perceptions of value co-creation. The insights are relevant to broader studies of co-creation, self-service technology and technology-based participation in the service process as well as a wide range of service contexts.

The structure of the paper is as follows. We begin by providing an overview of the concepts of empowerment and e-empowerment. We then set out the research context and method and present an analysis of the research findings. We conclude with a discussion of the implications of the findings and the research limitations before suggesting future research pathways.

Literature review

Concept of empowerment

Empowerment can refer to a process or an outcome (Pires et al., 2006). “Empowerment-as-Process” involves the development and implementation of mechanisms to enable individuals or groups to gain control, develop skills and test knowledge. “Empowerment-as-Outcome” is an affective state in which the individual or group feels that they have increased control, greater understanding and are involved and active (Zimmerman & Warschausky, 1998). Implementation of empowerment mechanisms does not necessarily result in empowerment outcomes. Moreover, “empowerment ... can have different intensities that change over time. It is not an absolute threshold that once reached can be labelled as empowered” (Zimmerman, 1990, p.170). Hence it is important to understand individual differences in the response to empowerment.

Empowerment theory is identified as fragmented and eclectic (Zimmerman, 1990). Denegri-Knott et al. (2013) reject the possibility of a universal and generalised approach; arguing for a more contextualised understanding of empowerment that situates research within clear theoretical boundaries. Responding to this call, we draw on the emerging yet distinct concept of e-empowerment which “refers to how the net, as an enabling technology, allows people to do things that they found difficult to do and were unable to achieve before” (Amichai-Hamburger, 2008, p.1773). We use the term e-empowerment to incorporate synonymous terms such as “empowerment by the web” (Zwass, 2010), “online consumer empowerment” (Siano, Vollero & Palazzo, 2011) and “digital empowerment” (Zhao, Grasmuck & Martin, 2008).

Co-creation and e-empowerment

A selection of empirical studies that assess the degree to which participation and co-creation via internet and web technology empowers individuals in their consumption practice is summarised in Table 1. This is not presented as an exhaustive list but rather as an overview of empirical work. In these studies there is evidence of individual internet use leading to “Empowerment-as-Outcome”. Evidence from experiments by van Bueningen, de Ruyter, Wetzels & Streukens (2009) and Fuchs, Prandelli & Schreier (2010) indicates that engaging in online tasks results in a change in individual perceptions of empowerment. Van Beuningen et al. (2009) identify that the degree to which empowerment is experienced varies between individuals, but the extent of variation noted is limited by the use of student participants.

[INSERT TABLE 1 NEAR HERE]

There is also support for the internet to facilitate “Empowerment-as-Process”. Harrison, Waite & Hunter (2006), reveal how consumers found internet use gave them greater control over their buying decisions. In a survey of consumers experienced in co-creation tasks, Füller et al. (2010), found that online tools had the potential to make consumers enjoy the participation experience and feel empowered by the process and argue that “as a consequence, consumers may be more innovative, and willing to put in the effort and persistence to make valuable contributions” (p.93). However, it is also important to note that increased choice and information offered by configuration tools can result in decreased trust, enjoyment and satisfaction amongst individuals with limited product knowledge (Matzler, Steigler & Füller, 2011).

There is empirical evidence that links several organisational benefits with providing an environment for e-empowerment. For example, van Beuningen, de Ruyter & Wetzels (2011), find that empowering customers through effective information provision affects service evaluations such as usage intentions. Fuchs et al. (2010) find that empowering customers within the NPD process to select products to be marketed increased purchase intention and willingness to pay amongst research participants. However, in the studies reviewed, the focus has been on affective outcomes rather than behavioural outcomes and there is limited insight into any differences between individuals.

Notwithstanding the claims that the internet offers a route to customer empowerment via opportunities for interactive services, Berry, et al. (2010) note, there is “a surprising lack of research on consumer power” (p.158). The ability of digital technology to shift greater power to the consumer from the marketer is emerging as a distinct field of enquiry, yet “the discussion of consumer power through digital media is in its infancy” with many aspects poorly understood (Labrecque, Mathwick, Novak & Hofacker, 2013, p.266).

We contribute to the theoretical discussion by exploring both the construct of e-empowerment and the potential for e-empowerment through service co-production via interactive web technology. The central question explored is: what is the impact of co-production via interactive web technology on consumer perceptions of value co-creation in the form of e-empowerment? Within this, we consider: what are the dimensions of e-empowerment and what is the relationship between self-service task performance and e-empowerment?

Methodology

Research context

Pensions and pension websites were chosen as a suitable context for several reasons. In an effort to close the savings gap, UK government policy recognises that individuals need to be informed, engaged and empowered to take decisions that will secure their well-being in retirement (Devlin, 2010). The widespread shift from defined benefit to defined contribution schemes has increased the expectation that individuals will be more active, engaged and responsible for their pension outcome, thus increasing their co-production role. Pension websites are increasingly being used as tools to engage pension scheme members, to increase the availability and accessibility of information as well as give scheme members direct control over their fund allocation (Harrison, Waite & Hunter, 2006). Zwass (2010) terms this practice sponsored co-creation defined as “co-creation activities conducted by consumer communities of individuals at the behest of an organization (termed the producer)” (p.11). Hence, this study aims to examine critically the dimensions along which pension scheme members perceive themselves to be empowered by participating in service co-creation via a pension website.

Research design

A two-stage research design, involving both qualitative and quantitative stages, was used. The qualitative stage consisted of four focus groups with members of pension schemes: a total of 24 individuals took part, 10 female and 14 male covering a wide range of ages and all with internet experience. In the absence of established scales to measure empowerment, the primary purpose of the focus groups was to explore participants' use of their pension website, the meaning and role of empowerment in this

context, and inform the development of measurement items for the quantitative stage.

Analysis of the focus group discussions suggested that use of the pension website resulted in four possible outcomes: information access; improved understanding; autonomous decision-making; behavioural change. Detailed discussion of focus group findings have been reported elsewhere (Harrison, Waite & Hunter, 2006); Table 2 provides an overview of illustrative quotes. The second stage, and key focus of this paper, involved the development of e-empowerment items to identify, test and validate the e-empowerment dimensions and to assess the impact of co-production tasks via the pension website on e-empowerment.

[INSERT TABLE 2 NEAR HERE]

E-empowerment measurement items

Despite the growing interest in e-empowerment there have been limited attempts to systematically measure the construct. To our knowledge no measurement scale has been developed in a consumption context. There is acknowledgement within the literature that empowerment is a multi-dimensional construct (Conger & Kanungo, 1988); our focus groups suggested potentially four dimensions. Within the context of employee empowerment in management research, empowerment is considered an internal set of beliefs, linked to Bandura's (1977) concept of self-efficacy defined as a belief in one's capability to organise and execute the courses of action required to produce given attainments (van Beuningen et al., 2011). Self-efficacy is an individual evaluation and an affective state.

We consider e-empowerment as defined by Amichai-Hamburger (2008) as the

process by which enabling technology empowers individuals to do things that they previously found to be difficult. As well as considering e-empowerment to be related to feelings of self-efficacy, we also consider it to be a type of task motivation that results in a cognitive assessment of difficulty and a behavioural outcome (Thomas & Velthouse, 1990). As such we consider e-empowerment to incorporate both behavioural (task achievement) and cognitive (assessed difficulty) dimensions, as also suggested by our focus groups.

Following the recommendations of Zimmerman (1990), who argues that psychological empowerment requires a contextual analysis to be fully understood, we develop items to measure e-empowerment which are grounded within the literature and also derived from focus group findings specific to the context of the study. Using wording derived from participants' quotes and definitions within the literature, we developed 15 e-empowerment items grouped under the four themes emerging from the focus groups, as shown in Table 2. Each item was measured using a 5-point Likert scale where 1 = strongly disagree and 5 = strongly agree.

Individual involvement, knowledge and technological capability

Zhu, Nakata, Sivakumar & Grewal (2007) stress that the effectiveness of self-service features relates to the match between the cognitive resources available to the customer and those demanded by the technology. Accordingly, we measured individual involvement, readiness to embrace new technologies and perceived understanding of and ability to use both the internet and the service (pensions) in order to ascertain the impact of these on e-empowerment.

We used a revised version of Zaichkowsky's (1994) Personal Involvement Inventory (PII) to measure involvement in the internet and involvement in pensions separately. Individuals were asked to rate the extent to which the internet (and pensions): is important/unimportant; means a lot to me/means nothing to me; does not matter to me/matters to me (reverse coded); is significant/insignificant; is of no concern to me/of concern to me (reverse coded). Individual involvement scores were based on summated scores from the 5-items (after reversing scores for reverse coded items). Scores range from 5 to 35: the higher the score the higher the involvement.

We used Parasuraman's (2000) Technology Readiness Index (TRI) to measure individual readiness to embrace new technologies. The scale measures four latent dimensions: Optimism (a positive belief that technology offers increased control, flexibility and efficiency); Innovativeness (a tendency to be a technology pioneer); Discomfort (a perceived lack of control over technology); Insecurity (distrust of technology). We used the short 6-item 5-point scale (1=Strongly disagree, 2=Somewhat disagree, 3=Neutral, 4=Somewhat agree, 5=Strongly agree). An individual TRI score is based on the mean scores for each dimension after reversing the scores for insecurity and discomfort items. A higher TRI score is associated with a higher readiness of individuals to embrace new technologies.

Individual perceived understanding of and ability to use the internet (and pensions) was measured using four items (My understanding of the internet is; My ability to use the internet is; My understanding of pensions is; My ability to manage a pension is) rated according to the following scale: 1 = poor, 2 = less than average, 3 = average, 4 = better than average, 5 = good. Subjective knowledge arguably provides a better understanding of a decision makers' systematic bias and heuristics than objective

knowledge (Park & Lessig, 1981) and their self-efficacy in using information (Bandura, 1977). Perceived understanding and ability has been shown to be particularly relevant in the context of financial services decisions (Harrison, 1994; Beckett, Hower & Howcroft, 2000).

A taxonomy of co-production tasks

Websites offer a range of self-service/co-production functionality that enables users to perform tasks, such as accessing information, communicating and performing transactions. The tasks available on the website were categorised into a taxonomic framework informed by the work of Zwass (2010) (see Table 3). Building on the authors' previous work (Waite & Harrison, 2007) into website task, we analyse and categorise website functionality as characterised by Zwass (2010) in terms of its: structural complexity (the number of sub-tasks and their interrelationships); intellectual demands (the knowledge, skill and creativity demanded); effort intensity (the focus and resources the individual needs to utilise to complete the task); and time frame (for task completion which can range from indefinite to immediate).

[INSERT TABLE 3 NEAR HERE]

Information seeking tasks are considered low in structural complexity since completion involves accessing the provider website to locate and read information. Communication and interaction is considered medium in all characteristics. A sub-set of the information gathering tasks that focus on specialist service information may require more specific engagement and the individual will need to expend cognitive resources in order to process the information. Such tasks are likely to be medium in intellectual demands and effort intensity. Tasks relating to purchases/transactions and on-going

management tasks may require preliminary information processing and also the inputting of information from the individual to ensure completion. These tasks are considered high in all characteristics apart from time frame which is considered medium. Hence, the taxonomy provides a sense of varying degrees of co-production.

Sample

A questionnaire containing the above measurement items was distributed to existing members of a pension scheme that was known to have a pension website. We used a case study approach. In accordance with theoretical sampling (Glaser & Strauss, 1967), the case company was selected on the basis that it had an operational and established pension scheme that employees could choose to join and were required to make decisions about their pension investments. The pension scheme also needed to have a website that provided members with the possibility to perform the tasks/actions set out in Table 3. Employees needed to have access to the internet within the work environment and were preferably familiar with technology as part of their job remit in order to ensure that capability to use the internet was controlled for. In addition, the company needed the necessary means to distribute an online survey to all its employees. Several organisations were contacted that fitted these requirements. The final case selection was determined by willingness to participate.

The survey was sent to 2700 employees of the case organisation. Employees were sent an email (with a link to the web-based survey) from their employer on behalf of the researchers. 198 usable questionnaires were returned, yielding an effective response rate of seven per cent. Online surveys have many advantages; however, response rates can be variable ranging from 7 to 44 per cent (Schonlau, Fricker & Elliott, 2002). A number of actions were taken to address non-response including

multiple reminders and an incentive of several retail vouchers; essentially, though, the survey was completely voluntary. Krosnick (1999) argues that the response rate is less important than the representativeness of the sample and suggests that surveys with low response rates can be more accurate than surveys with much higher response rates. Also important is the absolute size of the sample; the sample size is sufficient for the analysis planned, as discussed in relation to the subsequent factor analysis.

The sample is representative of the case study employee population. The sample comprises mostly men (78 per cent), but there is a good spread of ages and a good proportion is highly educated (64 per cent has an undergraduate degree and 24 per cent has a postgraduate degree). Almost all respondents (94 per cent) are making contributions to the pension scheme. 88 per cent of respondents were aware of their pension website and 88 per cent of those had used it: 27 per cent had used the website 4-6 times in the last 12 months. Overall, the proportion of pension scheme members who had used the website is high, although overall frequency of use is low. This is not surprising given the nature of pensions that do not require frequent transactions and interaction.

Analysis of Results

E-empowerment dimensionality

The 15 empowerment items were subjected to principal components analysis (PCA), using IBM SPSS Statistics Version 19, to assess the dimensionality of empowerment. Prior to performing PCA the suitability of the sample and data were assessed. The sample of 198 exceeds the recommended minimum size of 100 respondents (Gorsuch, 1983) and the recommended ratio of five respondents per item (i.e. $5 \times 15 = 75$) (Bryman & Cramer, 2011; Hair et al., 2006). Suitability of the data was

assessed via inspection of the correlation matrix, the Kaiser-Meyer-Olkin (KMO) measure (Kaiser, 1974) and the Bartlett's Test of Sphericity (Bartlett, 1954). The correlation matrix revealed the presence of many coefficients at the recommended level of .3 and above. The KMO value of .837 is well above the recommended value of .6, and the Bartlett's Test reached statistical significance. Taken together, this supports the factorability of the data.

PCA revealed the presence of four components with Eigenvalues greater than 1. An inspection of the scree plot revealed a clear break after the fourth component. All except one of the item communalities were above .50 (Hair et al, 2006); the remaining item revealed a communality of .47. It was decided to retain the item in further analysis because it was above the lower cut-off point of .40 suggested by Costello and Osborne (2005). To aid the interpretation of the four components, orthogonal (varimax) rotation was performed since it provides a clear separation of the factors (Hair et al., 2006). The rotated solution revealed a number of strong loadings and all except two items loaded substantially on one component only. Two items revealed cross-loadings higher than .3. PCA was re-run omitting those items, but it resulted in a solution that was not as easily interpretable. For this reason both items were retained and assigned to one factor only based on factor loading and conceptual alignment.

The reliability of the four factors was assessed using Cronbach alpha. Results provided alphas of: .85, .84, .60 and .40 for Factors 1 to 4 respectively. Ideal values should be above .70, but Briggs and Cheek (1986) note that with 'short scales' it is common to find quite low alphas of .5 or lower and recommend reporting the mean inter-item correlation for the items, the optimal range for which is between .2 and .4. The

mean inter-item correlations for Factors 3 and 4 respectively are .33 and .25, which fall within the optimal range.

The four components explained a total of 64.6 per cent of variance with each component respectively contributing 26.2 per cent, 16.5 per cent, 11.5 per cent and 10.1 per cent of variance.

[INSERT TABLE 4 NEAR HERE]

Factor 1 contains a set of items that relate mainly to ‘being more informed’, ‘having a better understanding’, ‘knowing’ as well as processes/conditions that lead to these outcomes, such as access to information. Collectively, these items are concerned with the processes related to the acquisition of knowledge and the outcome of knowing/understanding. Consequently, this factor was labelled “Cognitive Empowerment” since the term ‘cognition’ is used to refer to ‘knowing’. Factor 2 contains items that relate to emotional outcomes, such as ‘feeling in a better financial situation’ and ‘satisfaction’. Collectively, these items relate to emotional expression and being influenced by or resulting from emotions. Consequently, the factor was labelled “Affective Empowerment” since ‘affect’ is a term used in the literature to refer to ‘feeling’. Factor 3 contains items relating more closely to behaviour (such as having saved more) or behavioural intent. For example, feeling less reliant on financial experts implies an intention to engage in more autonomous action which is also supported by feeling more confident about making one’s own pension decisions. These statements embody a sense of feeling but with a behavioural or goal-directed purpose, which can be contrasted with the items in Factor 2 that relate primarily to an emotional response to a current state. Consequently, Factor 3 was labelled “Conative Empowerment” since

‘conation’ is a term used in consumer behaviour to describe purposeful action. The final factor contains just two items that relate to feeling more confused about pensions as a result of using the pension website and feeling that the level of control the pension website gives is not congruent with one’s desire for control (i.e. too much control). Since these are the only two items that refer to negative outcomes from using the pension website and a sense of powerlessness, this factor was labelled “Disempowerment”.

Co-production and e-empowerment

To assess the varying degrees of empowerment perceived by individuals engaged in sponsored co-creation websites, individuals were classified based on the scores from the e-empowerment items. This was achieved via cluster analysis using the regression factor scores for the four e-empowerment dimensions derived from the PCA. K-Means, an iterative, non-hierarchical clustering method, was used in SPSS. K-Means does not determine the number of clusters, hence it is necessary to apply intuitive, conceptual or theoretical relationships where they exist, and where they do not Hair et al. (2006) advocate selecting a number of cluster solutions and examining the results in terms of their interpretability and meaningfulness.

Our approach consisted of examining two, three and four cluster solutions. Conceptually we would not expect to find more than four clusters based on a set of four distinct empowerment dimensions. Following analysis, however, the three-cluster solution provided the best solution in terms of balance of cluster membership and distinctiveness in terms of the e-empowerment dimensions based on ANOVAs for each of the original 15 empowerment items to assess the extent to which the differences in the means across the clusters were statistically significant.

[INSERT TABLE 5 NEAR HERE]

Table 5 shows the means, significance and eta squared values. Lower scores (i.e. those most strongly disagreeing with the statement) are indicated by rounded brackets and those with highest scores (most strongly agreeing with the statement) are indicated by squared brackets. The table shows that the cluster differences in the mean scores for all items except one are statistically significant at or above the 95 per cent level. The one item that is not statistically significant is “I have more control than I want”. Two-thirds of the sample disagreed with this statement.

Eta squared shows the measure of the magnitude of the differences between groups, ranging from 0 to 1, and represents the proportion of variance in the dependent variable that is explained by the independent variable. Cohen (1988) suggests that eta squared values of .01 represent a small effect, .06 represents a moderate effect and .14 a large effect. On this basis, excluding the non-significant item, two items (“I feel more confused about pensions” and “I feel less need to rely on the advice of experts/advisors”) show a moderate effect while all remaining items show a large effect.

The clusters account for 54 per cent, 34 per cent and 12 per cent of the sample respectively. Cluster 1 is the smallest cluster accounting for 12 per cent of the sample. This cluster displays the lowest mean scores for all items in the cognitive, affective and conative empowerment dimensions and the highest mean score for the item “I feel more confused about pensions”. This cluster most strongly disagrees with the statement “I have more control than I want”. Individuals in this cluster also tended to disagree ($M = 2.07$) that they have more control over their own pension as a result of using the pension

website. Taken in combination with the overall low scores for cognitive and affective empowerment this cluster does not seem to have derived any significant empowering effect from using the pension website and seems to feel a lack of control, hence appears to be disempowered. The pension decision process has elsewhere been described as a process of “analysis by paralysis” for some (Harrison, Waite and White, 2006). In this context, the pension website and the increased potential for co-production and control seems to have added to the state of “paralysis”; on this basis we label this cluster “Paralysed”.

Cluster 2, accounting for 34 per cent of the sample, emerges with the highest overall scores for the items making up the cognitive, affective and conative empowerment dimensions, and the lowest in terms of feeling confused. This cluster appears to be empowered in all dimensions. Interestingly, the mean score for the item “I have more control than I want” is also low with a tendency for this cluster to disagree with the statement. Overall, 67 per cent of the total sample disagreed that they have more control than they want, suggesting that the majority would like more control. In contrast to Cluster 1, individuals in this cluster tend to agree ($M = 4.15$) that they have more control over their pension as a result of using the pension website. Hence the desire for more control must be interpreted within the context of an already empowered group. On the basis that this cluster demonstrates the highest scores for all three positive empowerment dimensions (cognitive, affective and conative empowerment), this cluster was labelled “Empowered”.

Cluster 3 is the largest group accounting for 54 per cent of the sample. This group displays similarly high scores as Cluster 2 in terms of items relating to cognitive empowerment, but scores lower in terms of items relating to affective and conative

empowerment. For example, whilst individuals in this cluster tend to disagree that they feel more confused about pensions as a result of using the pension website, they also tend to disagree that they feel more confident in their ability to enquire about pensions and that they have saved more towards their retirement. Hence, this cluster seems to have benefited from some of the empowering effects of access to more information via the pensions website, but this has not had a transformative effective in terms of behavioural empowerment. On this basis, this cluster was labelled “Informed”.

Consumer characteristics and e-empowerment

In an attempt to account for the effects of any individual consumer characteristics on e-empowerment, we also explored whether the clusters differed according to involvement (using the Personal Involvement Inventory, PII), knowledge, willingness to accept new technology (using the Technology Readiness Index, TRI) and demographic characteristics.

We found no statistically significant differences between the clusters in terms of their involvement in either the internet or pensions using PII. All clusters rated both the internet (M= 31.6, SD=3.88) and pensions (M=32.25, SD=3.45) high on the involvement scale (35 = highest involvement). No statistically significant differences between the clusters were found in terms of TRI. Individuals in all clusters rated themselves generally high in terms of technology readiness (M=14.65, SD=1.92) out of a potential highest score of 20.

We found no statistically significant differences between the clusters in terms of understanding of the internet (M=4.76, SD=.557) and ability to use the internet (M=4.79, SD=.527) which were rated as “better than average” across all clusters, and

understanding of pensions ($M=3.55$, $SD=.994$) and ability to manage a pension ($M=3.29$, $SD=.965$) which were rated as “average” across all clusters.

We also found no statistically significant differences between the clusters according to gender, age or income. Taken together, this suggests that the differences in e-empowerment are not linked to individual differences in involvement, knowledge and technological capability, but are instead associated with the individual interaction with the pension website, the details of which are discussed below.

Impact of co-production task on e-empowerment

Using the taxonomic framework outlined in the methodology, we explored the association between the co-production task (exhibiting varying levels of complexity and intensity) and empowerment. We analysed pension website use by cluster in the recent period before the survey (the last 12 months) in terms of both frequency of use and nature of use. The “Empowered” individuals reported a higher order of co-production in terms of frequency of interaction: 64.1 per cent had used the website at least 4 times in the last 12 months. Similar proportions of both the “Paralysed” (64.3 per cent) and the “Informed” (62.3 per cent) had used the website 3 times or less in the last 12 months.

[INSERT TABLE 6 NEAR HERE]

Differences are also apparent in terms of the complexity and intensity of the co-production task. With regards to the function of information seeking, engagement with most tasks is high across all clusters, particularly the tasks related to general information access. Almost three-quarters of the “Paralysed” have used the website to find out about their contribution history and about fund and investment choice. The

proportions though are even higher for the “Empowered” and “Informed”. Interestingly, more “Paralysed” individuals have used the website to find out how their pension works (64.3 per cent) compared with just over half of the others. This may be explained by a higher need for cognition among these individuals. Notwithstanding, this does not appear to have led to an increased understanding of pensions, thus confirming their state as ‘paralysed’. The more specific informational tasks relating were conducted less overall, but more by “Empowered” and “Informed” individuals than “Paralysed”.

The tasks that comprise the function of communication/interaction were used by less than one third of the sample overall. Slightly higher proportions of the “Empowered” (42.9 per cent) have used the website to contact the pension plan administrators followed by just over a third of the Paralysed cluster (35.7 per cent) and around a quarter of the Informed cluster (25.5 per cent). Communication/interaction may be linked to information gathering/querying or to transacting. The higher proportions of the “Paralysed” (compared to the “Informed”) may be linked to information provision or seeking clarification, whereas the “Empowered” are more likely to have engaged in communication as part of transacting (supported by the higher percentages of use in this area).

Far less use of the website has been made for the highest level of co-production complexity: transacting and pension management. Where it has been used, the “Empowered” show the greater proportions of use. The “Paralysed” have made limited use of the website for such tasks compared with the “Empowered”: 15.4 per cent used it to switch investments between funds compared with 38.9 of “Empowered” individuals.

Respondents were asked about their intention to continue to engage in co-production tasks via the website over the next 12 months. Individuals in all three

clusters said they intended to use the website over the next 12 months, the differences were in the extent of likelihood: 89.5 per cent of the “Empowered” said it was extremely likely that they would use the website in the next 12 months, compared with around a third of the “Informed” and “Paralysed”. In terms of the extent of intended use, 75 per cent of both the “Paralysed” and the “Informed” said they envisaged the extent of their use of the website to remain the same over the next 12 months (i.e. the extent of co-production complexity was not foreseen to increase), whereas a good proportion of “Empowered” individuals envisaged their use to increase (43.6 per cent) or remain the same (53.8 per cent). 8 per cent of the “Paralysed” individuals envisaged their use to decrease; they were not empowered to increase their extent of co-production.

Discussion and conclusions

This research contributes to Service Dominant logic and empowerment theories and helps to inform best practice in the use of self-service technology for services marketing. Specifically it provides insight into consumer perception of value co-creation when using self-service technology in service co-production. Our work enriches the conceptualisation of value co-creation by demonstrating empowerment as an outcome to be gained from the experience of service co-production. We examine the construct of e-empowerment within the context of co-production via self-service web technology. Our findings confirm e-empowerment as a multi-dimensional construct comprising the salient dimensions of: cognitive empowerment, affective empowerment, conative empowerment and disempowerment.

Consumers can derive co-created value from each empowerment dimension separately and in combination with other dimensions. However, consumers need to benefit from cognitive, affective and conative empowerment collectively to experience

the fullest sense of value co-creation which we identify as holistic e-empowerment. Our findings show that any combination of a reduced set of e-empowerment dimensions leads to an impoverished or partial empowerment outcome, or potentially a disempowering outcome. Analysis indicates that those who participated more fully in service co-production tended to derive the greatest value from e-empowerment in all its dimensions. However, those who participated in a more limited way in service co-production derived a partial sense of empowerment.

The identification of conative e-empowerment as a component of value co-creation contributes to empowerment theory and addresses debates regarding the extent to which information access is more important than the ability to utilise information. For example, Pitt et al. (2002) argue that incomplete information and information asymmetries do not provide conditions where individuals feel they can act, hence rendering them powerless. Starkey (2003) observes a 'professional paradox' which often results in consumers being disempowered by the expertise of professionals. This position would support the removal of intermediaries who act as gate-keepers to complex information within the service supply chain, examples of which are medical and financial advisors. In contrast, Bandura (1977) theorises that mere access to information is not sufficient in itself, and consumers need to have the ability to understand the information to utilise it effectively, or the capacity and self-efficacy. This position would support the inclusion of expert advisors as intermediaries within the services supply chain.

Our findings suggest a more subtle process is present and that replacing intermediaries by the use of self-service technology empowers only certain consumers and not others. Hence, for some individuals co-production does not lead to co-creation

of value. In our study, some individuals experienced a sense of disempowerment via access to too much information or being given too much control. Shankar, Cherrier and Canniford (2006) note that in some markets, in particular financial service markets, giving more power and choice to the consumer “is actually disempowering rather than empowering” (p.1021). Giving the consumer more choice often makes choice harder not easier due to the added cost of information processing. “When the cost of processing all this information outweighs the benefit, inertia or choice paralysis sets in” (Shankar et al., 2006, p. 1021). Hence, there are potential implications for co-production. Zwick et al. (2008: 173) argue that “co-creation means that consumers receive little more than “propositional value”, whereas the realisation of actual use value is dependent upon consumers’ added labour input”. Co-production is thus a double-edged sword: on the one hand it can be empowering and liberating for some consumers leading to value co-creation, but for others it can be confusing, paralysing and exploitative and actively contribute towards the destruction of value.

Our findings also highlight the need to acknowledge the potential for value co-creation as both a process and an outcome. Our findings point to a combination of both empowerment-as-process and empowerment-as-outcome resulting from engagement in co-production activities. Whilst some individuals experience value from the process of co-creation, this does not necessarily lead to the experience of value in use of the outcome. In our study, the transformative interaction with the website accounted for the greatest impact on e-empowerment, providing support for experiential value co-creation as a co-production outcome. However, additional research is needed to determine how varying levels of consumer co-production activity lead to different empowerment outcomes. Results would provide useful insight into the effective design of service marketing activities to encourage all dimensions of e-empowerment.

Managerial implications

Zwick, Bonsu & Darmody (2008, p.166) state that “co-creation represents a dialogical model that no longer privileges the company’s vision of production...and customer value”. Our work presents a customer classification that enables services marketing managers to formulate a targeted and tailored marketing strategy to facilitate technology-based self-service. Research in a product context has identified that empowerment results in affective outcome such as positive perceptions, trust and intention to repeat participation in co-production (Füller et al., 2009). This study shows that in a services context affective e-empowerment, which is comprised of items relating to positive post-purchase evaluation, is an important determinant of customer engagement in co-production.

In terms of implementing co-production informed business models, our results provide support for a focus upon individual differences amongst consumers rather than focus upon structural constraints. For example, within the pensions industry prior research has focused largely on systemic weaknesses and the barriers that prevent saving rather than methods by which to build the capacity of individuals who have enrolled in pension schemes to engage with their pension product. In addition, the identification of different but distinct dimensions of e-empowerment indicates that there is scope for services organisation to inform members of the value outcomes that they can anticipate from co-production activity. Indeed Zwick et al. (2008) note that Service Dominant Logic requires “marketing to position itself as a mere facilitator and partner of consumer ingenuity and agency” (p.173).

In terms of evaluating co-production activity, we would argue that it is important for service organisations to monitor the dimensions along which e-empowerment is

experienced in order to consider changes in online functionality that supports each dimension equally. For example, Füller et al. (2009) note the empowerment perspective can inform website design, for example focus on trial and error functionality, immediate feedback mechanisms, intuitive user interfaces, and also explain the successful adoption of certain sites over others. Hence our findings show that the construct of empowerment “may serve as a useful theoretical base when designing effective and efficient co-creation tools” (Füller et al., 2009, p.94).

We would caution that there are limitations to e-empowerment and marketers must be aware of the ethical implications of encouraging consumers in co-production activities. As Zwick et al (2008) argue: “co-creation also signifies the exploitation of consumers even if co-productive activities are engaged in voluntarily and at times with a significant degree of enjoyment” (p.180).

Limitations and future research suggestions

We note a small number of limitations associated with the methodology of the research that may have an impact on research findings. The data is based on a survey of individuals from a single case organisation. Whilst we believe that this case is typical of other organisations in the context studied, further research should be undertaken to ensure that the dimensions of e-empowerment can be replicated and validated with additional samples of other similar organisations and in other service contexts, since, as Malton and Rappaport (1984) note, empowerment “takes on a different form in different people and contexts” (p.2). Hence, studies of other services contexts may be conducted to assess the transferability of e-empowerment dimensions and assist in building a broader picture of the theoretical contribution.

Further research could compare different websites according to the scope for co-creation tasks and the intellectual demands placed on individuals to assess the impact of varying degrees of co-production on empowerment outcome. Research could also usefully explore differences between voluntary and mandatory use of self-service technologies and the impact specifically of mandatory use on consumer engagement in co-production and perception of value co-creation. There would also be benefit in future research taking into account a wider range of outcomes than those included in this study, for example control, self-efficacy and the potential of co-production tasks to co-create value in the form of increased consumer education.

An interesting area arising from this study points to the need to better understand the transformative impact of empowerment-as-process. The findings of this study clearly indicate that the differences in empowerment experienced are not associated with differences in knowledge and understanding or ability to use technology, and must therefore be associated with the technology and tools used and specifically the task activity. Further studies could be directed at understanding specifically how and what consumers are using the technology for to better understand the link between technology interaction, co-production and empowerment. This would usefully inform how to develop technology to enhance empowerment according to both task activity and individual consumer characteristics.

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Table 1 Overview of empirical studies concerning e-empowerment

Date	Author(s)	Context	Key Findings
2006	Harrison, Waite & Hunter	Online Information Provision	Consumers generally perceive the internet as empowering but there are gaps between consumer information need and organisational provision.
2009	van Beuningen, de Ruyter, Wetzels & Streukens	Online information provision (Investment choice)	Evaluations of credibility and quality of online information positively influence self-efficacy perceptions particularly for novice consumers. In addition, individuals with high-role engagement put greater emphasis on source credibility compared to less engaged consumers.
2009	Füller, Mühlbacher, Marzler & Jawecki	Internet based co-creation (10 product categories)	Well-designed online co-creation tools trigger consumer perceptions of empowerment and enjoyment of new product development tasks.
2010	Fuchs, Prandelli & Schreier	Online new product selection (T-shirts & breakfast cereals)	“Empowerment-to-select” those new products which are to be produced increases psychological ownership and willingness to pay more but this effect depends on customer perceptions of their own competence.
2011	Matzler, Steiger & Füller	Online Product Configuration (Personal Computer)	Customer confusion when faced with increased choice is lessened by prior product knowledge and online tool usability
2011	van Beuningen, de Ruyter & Wetzels	Online Information Provision (Investment choice and online training programme)	An increase in self-efficacy perceptions as a result of completing online information search results in an increase in perceptions of service value.

Table 2: Development of empowerment measurement items

Empowerment aspect	Measurement item	Illustrative quote from Focus Groups
Information access	<p>I have access to more information on my pension.</p> <p>I am better informed about pensions in general.</p>	<p><i>"I have got the information there. And I feel empowered if you like"</i></p>
Improved understanding	<p>I have a better understanding of how my own pension works.</p> <p>I know how much my pension is worth.</p> <p>I am taking more of an interest in my own pension.</p> <p>I feel more confused about pensions. (reverse coded)</p>	<p><i>"One of the reasons I feel empowered with the internet, it is very useful all these search engines, these comparative ones that compare prices ... if one searches through several then you feel this greater knowledge and you are better equipped as a consumer"</i></p>
Autonomous decision-making	<p>I feel more confident about making my own pension decisions.</p> <p>I feel more confident in my ability to make enquiries about my pension</p> <p>I feel less of a need to rely on the advice of financial experts/advisors</p> <p>I have more control over my own pension.</p> <p>I have more control than I want (reverse coded)</p>	<p><i>"I think it is about having enough information to be able to make those decisions for yourself"</i></p> <p><i>"I think control's a key ... it is more than acquisition of greater knowledge"</i></p> <p><i>"I think it cuts out the middleman ... now we can get the information whilst searching around on Google ... so you don't need a financial advisor, you can do it all yourself, if you have got the ability and the time. To me that is empowerment"</i></p>
Behavioural change	<p>I have saved more towards my retirement.</p> <p>I am in a better financial situation regarding my retirement.</p> <p>My satisfaction with the pension plan has increased.</p> <p>I have been able to make the most of being in the pension plan.</p>	<p><i>"...allowing people perhaps, who don't understand as much about pensions or indeed almost nothing about pensions in some cases, to actually engage a bit more"</i></p>

Table 3: Taxonomy of website functionality and task performance

Functionality	Task	Task Characteristic
Information seeking	<ul style="list-style-type: none">• Find out about the company that administers the pension• Find out about how my pension works• Find information about contribution history• Find out about fund and investment choice• Find out about Additional Voluntary Contributions	Low structural complexity Low-Medium intellectual demands Low-Medium effort intensity Low-Medium time frame
Communication /interaction	<ul style="list-style-type: none">• To Contact Pension Plan Administrators• Access links to other relevant information/websites• To print off forms for completion	Medium structural complexity Medium intellectual demands Medium effort intensity Medium time frame
Transaction/ management	<ul style="list-style-type: none">• To join the pension plan• To apply for Additional Voluntary Contributions• To change contribution Levels• To switch investments between funds	High in structure complexity High in intellectual demands High in effort intensity Medium time frame

Table 4: Principal Component Analysis

Variables As a result of using the pension website ...	Components and Loadings			
	Cognitive empowerment	Affective empowerment	Conative empowerment	Dis-empowerment
I have access to more information on my pension	.820			
I have more control over my own pension	.702			
I am taking more of an interest in my own pension	.666			
I know how much my pension is worth	.662			
I have a better understanding of how my own pension works	.637			
I am better informed about pensions in general	.615			
I am more confident in my ability to make enquiries about my pension	.612			
I am in a better financial situation regarding my retirement		.795		
I have been able to make the most of being in the pension plan		.753		
My satisfaction with the pension plan has increased		.747		
I feel less of a need to rely on the advice of financial experts/advisors			.776	
I have saved more towards my retirement			.684	
I feel more confident about making my own pension decisions			.499	
I feel more confused about pensions				.770
I have more control than I want				.607
% Variance	26.2	16.5	11.5	10.1
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.837				
Bartlett's Test of Sphericity = Approx. Chi-Square 726.063, Sig. .000				

Table 5: Empowerment dimensions by cluster (mean values)

Items	Clusters				Statistical significance	
	Cluster 1 'Paralysed'	Cluster 2 'Empowered'	Cluster 3 'Informed'	All Clusters	p. value	Eta Squared
Factor 1: Cognitive empowerment						
Access to more information on pensions	(2.43)	[4.64]	3.82	3.93	.000***	.467
Better informed about pensions	(1.64)	[3.59]	2.80	2.93	.000***	.323
Better understanding of own pension	(1.64)	[3.51]	3.08	3.05	.000***	.342
Know how much pension is worth	(1.86)	[4.67]	3.69	3.79	.000***	.492
More interested in own pension	(2.43)	[4.08]	3.61	3.62	.000***	.267
Have more control over own pension	(2.07)	[4.15]	3.34	3.54	.000***	.407
More confident in ability to enquire about own pension	(1.86)	[4.00]	2.98	3.19	.000***	.447
Factor 2: Affective Empowerment						
Satisfaction with pension plan increased	(1.29)	[3.69]	2.39	2.70	.000***	.539
Made the most of being in the pension plan	(1.64)	[3.46]	2.72	2.84	.000***	.423
Better financial situation regarding retirement	(1.43)	[3.26]	2.28	2.51	.000***	.381
Factor 3: Conative Empowerment						
More confident making decisions	(1.54)	[3.56]	2.89	2.96	.000***	.401
Less need to rely on financial experts/advisors	(1.93)	[2.90]	2.67	2.66	.001***	.113
Saved more towards retirement	(2.00)	[3.15]	2.48	2.65	.000***	.154
Factor 4: Disempowerment						
More confused about pensions	[3.14]	(2.23)	2.70	2.60	.005***	.092
More control than I want	(1.79)	2.13	[2.30]	2.18	.127	.037

*** p value significant at or above 5% level

Based on the following scale: Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly Agree (5).